AMERICAN
GAS JOURNAL
Established 1859 Pioneer of the Gas Industry

VOL. 124. No. 20.
WHOLE No. 3686

NEW YORK, SATURDAY, NOVEMBER 13, 1926.

Subscription, $3 Per Year
$4 Canada $5 Foreign

Library of Congress
NOV 15 1926
Smithsonian Depoit

PROTECTION

On seventeenth century Sundays our Pilgrim fathers wended their way to church, each with a loaded musket on his arm. Constant vigilance was their ever-present need, the iron barrel of a musket their best defense. The Pilgrim and his weapon were inseparable.

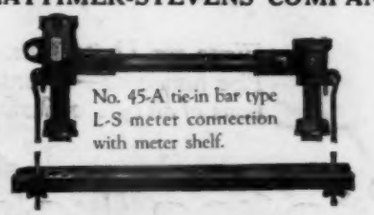
Your gas lines are also exposed to hidden attack—strains, sags and washer shrinkage are ambushed enemies of your property. For their protection, Lattimer-Stevens meter connections and shelves are the standard equipment of gas companies in practically every state in the Union. The rigid iron bar protects from strains and sags, the shelf from washer shrinkage.

Lattimer-Stevens Connections are tested by heavy air pressure under water. Write us for sample and catalog.

72 Yale Ave. **THE LATTIMER-STEVENS COMPANY** **Columbus, Ohio**

New England Representative:
The Eastern Service Co.
Boston, Mass.

San Francisco Representative:
A. P. Bartley,
67 Second St.



No. 45-A tie-in bar type L-S meter connection with meter shelf.

Chicago Representative:
The Utilities Service Co.
122 S. Michigan Ave.

Lattimer Stevens
METER CONNECTIONS-SHELVES
STOP COCKS AND SEALS

Advertising Index, page 38 Index to Contents, page 4

Nearing the North Shore. Showing the dredger, pile drivers and cradle.

U.S. Flexible Joint Pipe for Submarine Lines

The installation shown here was made for the Delaware River Water Company by Frederick Snare Corporation of New York and Philadelphia.

The line, which consists of 64 lengths of our 16" Flexible Joint Pipe, was laid under adverse tide conditions at a maximum depth of 26' at high tide.

Under the water pressure test only four small leaks developed and these were easily recaulked by a diver. The water was then pumped out and an air pressure of 125 lbs. per square inch put on the line and maintained without evidence of leakage anywhere.

Write for United States Cast Iron Pipe handbook—it contains descriptions of all types of flexible joint pipe.

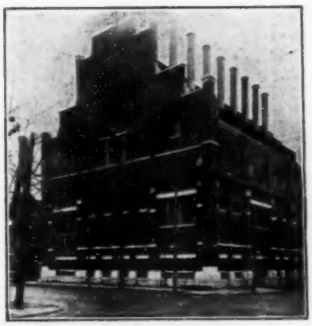
United States Cast Iron Pipe and Foundry Company

General Offices:
Burlington, New Jersey

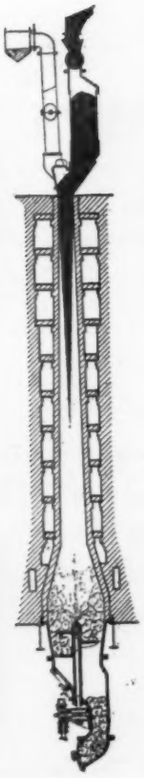
SALES OFFICES

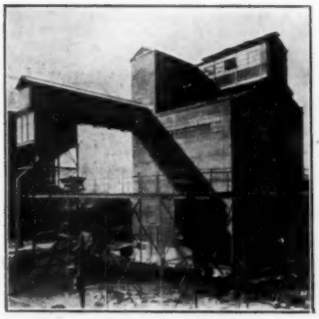
Philadelphia: 1421 Chestnut St.
Chicago: 122 So. Michigan Blvd.
Birmingham: 1st Ave. & 20th St.
Buffalo: 975 East Ferry Street
Cleveland: 1150 East 26th Street
New York: 71 Broadway
San Francisco: 3rd & Market Sts.
Pittsburgh: 6th & Smithfield Sts.
Dallas: Akard & Commerce Sts.
Kansas City: 13th & Locust Sts.
Minneapolis: 6th St. & Hennepin Ave.

GLOVER-WEST
Vertical Retorts

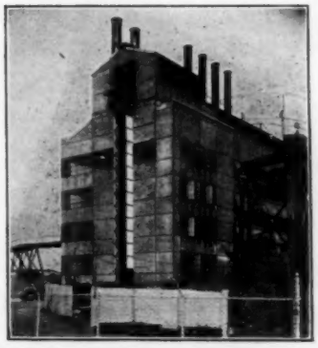


Toronto, Ont.

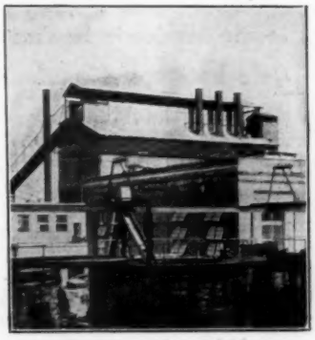




Fargo, N. D.



Portland, Me.



Fall River, Mass.

Views of Plants *Completed* in 1926

The *Glover-West* system gets the most out of the coal

WEST GAS IMPROVEMENT CO.

Builders of Coal Gas Plants

441 Lexington Ave. New York.

American Gas Journal

SIXTY-SEVENTH YEAR

Published Weekly by American Gas Light Journal, Inc., 53 Park Place, New York, N. Y.

S. G. KRAKE, Pres. & Treas. C. S. MYERS, Vice-Pres. A. M. GLEASON, Sec'y.

STANTON G. KRAKE, Managing Editor ISMAR GINSBERG, Editor

"MEMBER OF THE AUDIT BUREAU OF CIRCULATIONS"

Contents of This Issue

Home Service in Rochester—Kathryn L. Shattuck **579**
Dehydration of Manufactured Gas—F. W. Sperr, Jr. **581**
Reaching the Architect—A. E. Hansen **584**
Welding and Cutting With City Gas—J. Geartner **587**
Year's Close Promises Good Business—L. W. Alwyn-Schmidt ... **588**
Home Service Department **589**
As the Journal Views It **591**
Dehydration of Gas
Educating the Industrial Gas Salesman
Industrial Gas Lesson No. 143 ..... **593**
News of the Industry **595**

Subscription $3.00 per year, including postage, in the United States, Mexico, Cuba, Porto Rico, Hawaii or the Philippines; in Canada, $4.00; foreign, $5.00—Single Copies, 10 cents.

AMERICAN GAS JOURNAL, November 13, 1926. Vol. 123. No. 24.
Published weekly by American Gas Light Journal, Inc., New York, N. Y.
Entered as second-class matter Jan. 9, 1917, at the post-office at New York, N. Y., under the Act of March 3, 1879.

AMERICAN
GAS JOURNAL

Established 1859— Pioneer of the Gas Industry

Vol. 125. No. 24. NEW YORK, NOVEMBER 13, 1926. Whole No. 3606.

Home Service in Rochester

Various details of the equipment and work are given

Kathryn L. Shattuck

EVERY phase of woman's activity in the home, the sanctum of her major interests, is represented in the modern gas and electrical equipment which characterizes the new Home Service Home of the Rochester Gas & Electrical Corporation. July marked the formal opening of this new department to the women of the city and this department has become one of the busiest in the company.

Home service in this company is distinguished from similar departments in other corporations inasmuch as it has evolved from the home lighting activities of the Industrial Sales Department. What home service means to this company in its relation to the woman in her home is epitomized in the home service code which was first presented to the women of Rochester during a recent home beautiful exposition.

What Home Service Actually Means

"Home service represents the personality of this company as it reaches out to become acquainted with you personally in your home.

"Only one requirement is made before you are entitled to our services, and that it that you use either gas or electric service, or are contemplating doing so.

"Make yourself acquainted with our information service on the uses of gas and electrical equipment in the home.

"Every user of electrical or gas appliances can ask anything about their care or the methods of operation with the assurance of courteous, painstaking interest in their problems.

"Service for every home which uses or contemplates using any gas or electrical appliance is the purpose of this department.

"Every new installation of gas or electric range is followed up and tested by a member of this department.

"Rules for cooking various kinds of foods, and the correct temperatures to be used, are included among our services.

"Very few range owners know that fuel costs vary greatly with methods of operation.

"In case you desire a demonstration of your new range or appliance in your home, you can get this service by calling this department.

"Cooking food for the family three times a day calls for variety and tempting menus. We offer you cooking suggestions which have been tried and are scientifically approved.

"Every housewife likes to have information on the operating costs of her kitchen, laundry, heating and other appliances. We have studied operating costs and are prepared to give you accurate estimates or various fuel costs."

Helen A. Smith Director

Miss Helen A. Smith, illuminating engineer, is now director of the Home Service Department. Under her supervision an efficient staff of women are prepared to present methods of good housekeeping to the women of Rochester. Radio talks of interest to every woman are given at 11 o'clock in the morning over station WHEC.

The Home Service Home which houses the new department is architecturally unique in that it furnishes a home-like background in a quite hospitable atmosphere suitable for the active demonstration of the latest gas and electrical home appliances. No detail has been overlooked which tends to preserve the appearance of a real home. The entrance from out of the domestic sales section of the basement has been converted into a tiny reception hall with its attractive desk table and colorful points of light. The entrance opens into the auditorium with its slightly elevated stage permanently set up to represent a model home kitchen.

Arrangement of the kitchen furniture on the stage will enable many a prospective home owner to visualize the location of her own particular units. One of the happy features characteristic of the stage is its size which will allow small groups near the

scene of active demonstration. In this way a congenial atmosphere is created which tends to intensify the interest of the audience.

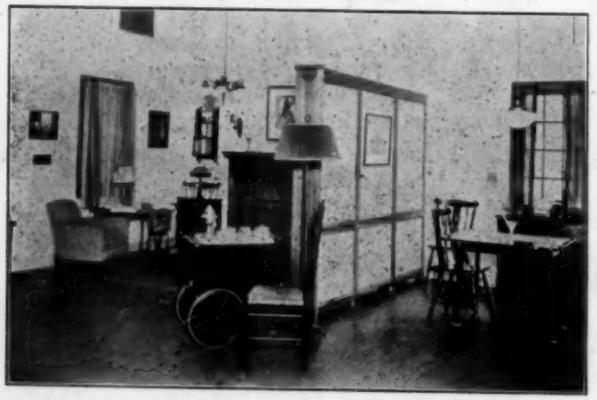


Exhibit of Rooms Fitted With Gas Appliances. Rochester Gas and Electric Corp.

The Kitchen Equipment

The kitchen equipment on the stage represents the latest progress in gas and electrical appliances. A white enamel table at the front of the stage is used for display purposes and for cooking demonstrations. That the housewife is a domestic engineer is quite evident as one studies the appliances which are her kitchen servants. Her work has been reduced to a basis of scientific regulation; in her cooking this has been accomplished by the oven regulator which automatically maintains a uniform temperature. The right wall of the stage is occupied by an oven-regulated gas range. Just off-stage to the right is the insulated oven which has proven a great aid in keeping the kitchen at its normal temperature.

Everything is as complete as any housewife could possibly wish for. On the right immediately off-stage is the pantry with its broad shelves and tall cupboards. The stage is the laboratory in which appliances are tested and approved for the company. Here cooking talks, appliance demonstrations, talks on home lighting and lectures on home subjects will be given. Some of these talks will be given by specialists in dentistry, medicine and sanitation. The educational work is not limited to cooking and lighting problems, but branches out into their many interesting phases.

The Other Rooms

The left section of the auditorium is divided into model rooms which are arranged in the order of bedroom, dining room, living room and bath. Perhaps one of the most effective features is the fact that these rooms are furnished in furnitures of Early American design which is symbolical of the true American idea. The movement back homeward into the kitchen recalls the days when it was the hearthstone of American home life. Today it is the touchstone of home life.

In the dining room one of the unique lighting features which has been incorporated into the construction of the rooms is the window capable of emitting morning sunlight and moonlight. A graceful taper-like candelabra furnishes this room with easy semi-indirect lighting. The variety of shades over each lamp is a device whereby the visitor can select that particular shade which appeals to her aesthetic sense.

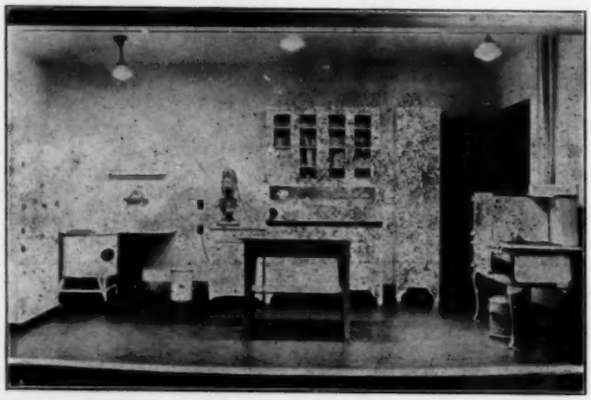
The character of the living room with its comfortably diminutive chairs is defined with attractive central and local lighting. An unusual pressed brick fireplace with oaken paneling furnishes an appropriate background for the radiant gas-fired heater. This strikes a distinctly happy note. The living room becomes particularly inviting every afternoon when its coziness is combined with the hospitable cup of four o'clock tea.

The semblance of a real home is preserved in the tiled bathroom which is a study in glistening high lights. Its features are electrical both in illumination and heating purposes. In all of the model rooms light is used to define the limits and correct character of the room in the house.

Auditorium Accommodates Large Crowd

The central auditorium of the Home Service Home can be made larger to accommodate any increase in the size of the audience. This is accomplished by simply removing the wall screen partitions and moving back the furniture in the model rooms. The Home Service Home is not only a meeting place for members of the company, but for any outside group which requests meetings relative to home service activities.

The right wall of the Home Service Home is the household engineering section. Here the laundry trays, electric washer, gas and electric ironer, and



The Demonstration Stage Showing Complete Kitchen Outfits. Rochester Gas and Electric Corp.

the drier are assembled to constitute a completely equipped home laundry. Porcelain tubs stand directly on the right of the hot water unit. From the trays the clothes can be hustled in the gas-fired drier which fans and blows them into regular sunshine sweetness. The ironer uses the combination of gas and electricity.

Home service in the Rochester Gas & Electric Corporation stands for enduring service one to the other.

Dehydration of Manufactured Gas*

I. Disadvantages of moist gas and advantages of dehydration

F. W. Sperr, Jr.

THE distribution of gas saturated with water vapor involves much expense and many disadvantages which would be eliminated by dehydration. The outstanding consequence of the present practice is corrosion of mains, pipes, meters and appliances, which is an increasing evil under modern conditions on account of the absence of protective oil condensation. Some direct evidence of the advantages of dehydration already exists. The paper describes the principal methods available for the dehydration of manufactured gas and draws the following conclusions:

1. *To be effective in eliminating the injurious effects of moisture, the gas should, in most cases, be dried to a dew point of 30° F. Further dehydration should not usually be necessary.*
2. *There are several feasible methods which can probably be applied at a cost not exceeding one cent per thousand cubic feet of gas, including fixed charges.*
3. *In a system of medium size, the direct net financial saving due to dehydration might be in the neighborhood of two cents per thousand cubic feet. Dehydration would also have great indirect value on account of better service and greater advantage in competition.*
4. *The disadvantages of dehydration should not be serious.*
5. *In systems distributing gas which produces little or no oil condensate, the injection of a suitable petroleum oil as fog or vapor should be adopted, irrespective of whether dehydration is practiced or not. Extremely small quantities of oil (three to five gallons per million cubic feet) are sufficient and the expense is insignificant.*

In practically all manufactured gas systems now in operation, the gas as it enters the distribution mains is saturated with water vapor. During the major portion of each year the temperature of at least a portion of the distribution system is lower than the dew point of the gas leaving the works so that more or less moisture is usually condensing and means must be provided for its removal. One million cubic feet of gas under atmospheric pressure measured at 60 degrees F. and saturated at 85 degrees F. carry one ton of water and more than half of this quantity of water may be deposited from every million cublic feet of such gas passing through the distribution system.

The disadvantages of the present practice, which necessitates the condensation of large quantities of water in the distribution system, have long been recognized. Such practice is responsible for great expense on account of the installation and maintenance of drips, on account of irregularities of service, and on account of corrosion troubles in mains, meters and services for which the moisture in the gas is largely resposible; but, so far, there has been little action on the part of the gas industry in the direction of deliberately undertaking to produce dry gas instead of saturated gas. In a few cases, partial dehydration has incidentally been accomplished through compression, and the results obtained in such cases have furnished interesting proof of the benefits that may be expected from the distribution of dry gas.

---

* Delivered at the Wednesday meeting of the Technical Section, A. G. A. Convention, Atlantic City, October 13, 1926.

Important Recent Developments

A number of recent developments, having originally quite different objectives, have made the present state of the art more propitious for serious consideration of the possibilities of dehydrating manufactured gas than has been the case at any time in the past.

1. Through the development of several satisfactory types of dry meters, the familiar wet displacement meter is no longer a necessity for the measurement of gas production at the works.
2. The invention of the waterless gas holder has solved the problem of finding suitable storage facilities for dry gas. There should also be mentioned, in this connection, the high pressure storage boiler which is coming more and more into favor in connection with high pressure distribution systems.
3. With lower heating value standards for manufactured gas, the necessity for the installation of drips merely for the sake of removing oil condensates is being largely eliminated while, on the other hand, the very absence of such oil condensate increases the liability of the distribution system to corrosion trouble through the presence of water.
4. Natural gas distribution systems are usually dry systems. With the substitution of manufactured gas for natural gas, which is going to take place in many of our cities, there will be strong incentive for the dehydration of a manufactured gas in preference to the wholesale installation of drips that would otherwise be required.

Disadvantages of Moist Gas

The outstanding disadvantage of distributing gas saturated with water vapor is the consequent corrosion. This reduces the life of mains, pipes, meters and appliances—a reduction which is greatly accelerated in modern practice. It necessitates the employment of expensive iron mains which, for the transmission of dry gas, might be replaced with steel mains suitably protected against external corrosion. It is responsible for deposits that reduce the capacity of the distribution system and interfere with its satisfactory operation. Provision for such deposits must be made in the form of larger pipes than might otherwise be necessary for satisfactory supply of a

given amount of gas. It is responsible for troubles due to deposits and deterioration in district and service governors. It produces a variety of meter troubles and is the source of great expense for testing, adjustment, repairs, and replacements of meters. It is often responsible for stoppages in burners and particularly in pilot lights. It is the cause of loss of gas through leakage, and through this and other factors is responsible for certain hazards in the use of gas.

Other Disadvantages

To the long list of expensive, annoying and harmful effects due to corrosion resulting from the presence of water, a number of other disadvantages may be added. Condensation of moisture is responsible for a certain proportion of unaccounted for gas. Condensed moisture requires expensive provision for the installation, maintenance and operation of drips. Some gas is always lost in the blowing of drips. With dry gas substantially free from any large amount of condensable oils, no provision for drips would be required. Such a distribution system is exemplified in numerous communities where natural gas is consumed.

In cold weather the presence of moisture often produces frosting in service pipes. Stoppages due to freezing may even extend to certain distribution mains. "Frost" formed in the larger mains is often loosened and carried along with the gas to create stoppages in other mains.[1]

As a precaution against frosting or freezing of mains and services, expense is required to locate or protect these in such a way as to guard against excessively low temperatures.

Moisture is an inert—of no value whatsoever except as a diluent. The transmission of one million cubic feet of gas saturated at 70 degrees F. and ordinary pressures involves the transmission of nearly 25,000 cubic feet of water vapor. From the standpoint of the consumer, moisture is probably worthless. No experimental comparisons of the efficiencies of dry gas and saturated gas appear to have been made, and investigations of this sort might lead to interesting conclusions.

Moisture and Corrosion

That liquid moisture is an essential factor in the atmospheric corrosion of iron and steel is universally admitted by authorities on the subject. There are several theories to explain the details of its action, but for present purposes it will be sufficient to state that it has no direct action on the metal, but serves as a vehicle for oxygen, carbon dioxide, sulphur dioxide, etc. In pure, dry air, iron will last indefinitely without rusting. Even when oxygen, moisture and carbonic acid are present, rusting will not occur unless conditions are such that the moisture condenses on the surface of the metal. Steel structures are remarkably durable in the atmosphere of warm regions where no condensation of moisture occurs. When metal is undergoing atmospheric corrosion the damage is often worse on the northern exposure than on the southern because the moisture deposited on the northern side is evaporated less rapidly by the heat of the sun.[2]

"Many excellently preserved iron articles exist in such countries as Egypt and India, etc. They have withstood the action of the atmosphere there for many hundreds and even thousands of years. It has, nevertheless, been recorded that samples of such material, when brought to this country (England) and submitted to the action of our atmosphere, corroded equally as rapidly as many of our modern products. Local conditions play an important part in the corrosion of iron, etc. Chief amongst these, and one characteristic of this country, is the excessive humidity of the atmosphere and the attendant other physical conditions whereby this moisture may condense in liquid form upon metals. Only in liquid form does moisture cause corrosion."[3]

Although the presence of moisture in liquid form is essential to atmospheric corrosion, it must not be assumed that corrosion cannot occur in an atmosphere only partially saturated with water vapor. A study of the so-called "dry corrosion" of metals has been made by U. R. Evans.[4] If a substance is placed in air that is partially saturated with water vapor, a certain number of water molecules become attached on the surface and this surface concentration of absorbed water increases as the pressure of aqueous vapor in the air is increased. On rough surfaces there is a preferential deposition of water in the "valleys," and it is probably for this reason that in many cases no visible dew film is formed on roughened metals even when placed in distinctly supersaturated air. The invisible film of absorbed moisture causes the corrosion of iron by such substances as sulphur dioxide, hydrogen sulphide and carbon dioxide even in unsaturated air.

Corrosion in the Gas Distribution System

The role of moisture in the internal corrosion of gas meters, service meters, and appliances is similar to that which it plays in atmospheric corrosion. It is the necessary vehicle for the action of such impurities as oxygen, carbon dioxide, hydrocyanic acid, and sulphur compounds. In a perfectly dry gas these substances would not attack steel or other metals of construction.

In British practice, it has been frequently observed

---

[1] C. W. Andrews, Effect of Cold Weather on the Gas Industry, Amer. Gas Inst. Proceedings, 1912, p. 680.

[2] F. N. Speller, Corrosion—Causes and Prevention, McGraw-Hill Book Company, New York, 1926.

[3] A. A. Pollitt, The Causes and Prevention of Corrosion, Ernest Benn, Ltd., 1923.

[4] Transactions of the Faraday Society, vol. 19, p. 201, 1923-24.

that many high pressure systems show more corrosion than low pressure systems. The reason is evidently that in such cases the gas is delivered hot from the compressors directly into the distribution system and that there is insufficient provision for removal of moisture on cooling.[5] On the other hand, great benefit has been obtained by raising the gas somewhat above the distribution pressure and cooling it at this high pressure. Systems of this sort in which much of the moisture is removed from the gas after compression has shown a noticeable absence of corrosion in the distribution system.[6]

Deposition of Drip Oil

Where the gas in the distribution system is nearly saturated with respect to condensible hydrocarbons, these substances are deposited as drip oil along with the condensed moisture. This oil condensate forms a water repellent and protective coating on the metal and has an important influence in retarding corrosion. In modern practice, the gas is frequently far below its saturation point for condensible hydrocarbons and much or all of the distribution system loses the protection of the oil condensates. This is the principal explanation for the fact often noted that corrosion is much more severe in most systems of the present day than was usual 15 or 20 years ago. Especially severe corrosion was noted in many British gas systems during the period of unusually low heating values directly following the war. Unusual amounts of oxygen, carbon dioxide, and possibly of hydrocyanic acid were undoubtedly also responsible, the action of these being facilitated by the absence of oil deposition.

It should be emphasized, however, that although oil condensates greatly retard corrosion they do not altogether prevent it. Considerable internal corrosion occurred in the distribution systems during the years of the candlepower standard, and this was particularly true of the smaller pipes, and of the meters, the protective effect of the drip oil being mainly felt in the larger mains.

Corrosion of Meter

With particular reference to meters, the investigations of the committee of the British Institution of Gas Engineers on the Life of Gas Meters[7] have shown that moisture is essential to corrosion. The corrosion of dry meters is more pronounced when benzol is removed from the gas by scrubbing.[8] Moisture also has an injurious effect on certain materials used for meter diaphragms. The 1920 subcommittee of the American Gas Association[9] on "Deposits in Meters" makes the following statement: "It is now generally recognized that these impurities (ammonia, carbon disulphide, cyanogen, oxygen, etc.) exercise corrosive action only in the presence of moisture and, applying this to our problem, it would appear that corrosion of meters should take place only when the temperature of the gas is reduced to its dew point, so that water vapor is actually present. To satisfy ourselves on this point we set several meters so that in some cases the temperature conditions surrounding the meters were higher than the temperatures of the entering gas, and, in other instances, lower. The same quantity of gas was passed through all meters. Corrosion was pronounced in all cases where the meters were at a lower temperature than the entering gas, while no corrosion was evident where temperature was higher than the entering gas. An interesting phase of our experience was the protective action of drip oil against corrosion of the metal parts. We found that as the ratio of oil condensate to water condensate increased the corrosive action on the metal parts decreased, although these increased percentages of drip oil naturally led to greater extraction of oil from the diaphragm leathers."

Direct Proof of Advantages Due to Dehydration of Gas

There is some direct evidence of the practical advantages that should be expected to be gained through the elimination of moisture from gas entering the distribution system. The absence of internal corrosion and consequent troubles in natural gas distribution systems should be mentioned as supporting evidence, but this sort of experience is not directly analogous because of the freedom of natural gas from corrosive impurities.

In the report of the Life of Meters Committee of the British Institution of Gas Engineers for the year 1919[6], special reference was made to the so-called "Helps System" in which at least partial dehydration was accomplished. This consists simply in the removal of moisture by compression and cooling. The gas is raised to "a few pounds" above the distribution pressure and is then cooled to its original temperature or lower, thus bringing down the water vapor content in excess of that pertaining to the pressure and temperature in the condenser. Subsequently the gas is expanded into the mains at a lower pressure and passes through the distribution system well below its saturation point.

The report cites the experience of one works in which the gas was compressed to 50 pounds per square inch, cooled, and subsequently expanded into the mains at 5 pounds per square inch. No corrosion or naphthalene deposition has been experienced. The

---

[5] Importance of Removal of Moisture from High Pressure Gas, Amer. Gas Inst. Proceedings, 1913, part 2, p. 186.

[6] Gas Jour., June 3, 1919, p. 569 et seq.

[7] Committee of British Institution of Gas Engineers on Life of Meters, Gas Jour. (or Jour. of Gas Lighting) June 13, 1916, pp. 563, 574, 586; June 12, 1917, p. 504; May 21, 1918, p. 330; June 3, 1919, p. 569; June 8, 1920, p. 583; Aug. 17, 1921, p. 377.

[8] J. G. Taplay, The Gas World, Oct. 19, 1918, p. 213.

[9] 1920 Sub-Committee, American Gas Association on Deposits in Meters, Tech. Section, p. 260.

condensed water brought down with it certain salts which played a direct part in corrosion. Analysis of this water was given as follows:

	Grains per Gal.
Ammonium thiocyanate	31.0
Ammonium ferrocyanide	15.0
Ammonium sulphate	4.4
Ammonium sulphide	1.6
Ferrous sulphate	1.3
Carbon dioxide	31.5

The amount of condensation was equivalent to about 80 gallons per million cubic feet of gas compressed.

Experience in Dehydration

The experience of the American Light and Traction Company was described by Mr. D. A. Powell at the recent conference of the Distribution Committee of the American Gas Association.[10] At one of the properties of this company, the gas is dehydrated by compression to 80 pounds and is distributed at approximately 5 pounds. This system which has been in operation for 9 years without drips or grades has a remarkable record of dehydration and excellent service to the consumer and absence of deterioration. Regulators are found to work much more satisfactorily than is customarily experienced with house regulators in ordinary medium high pressure systems. Regulators and meters are in excellent condition. Inspection of the diaphragms and valves has indicated that the gas passing through them is entirely clean, permitting the proper seating of the valves at all times. An examination of the distribution piping indicated a very unusual condition of freedom from scale and pitting. Experience of this company and of the British company cited above could doubtless be corroborated by a good deal of additional evidence.

[10] A. G. A. Monthly, June, 1926, p. 355.

Reaching the Architect*

Architects' service bureau advocated--Manner of working indicated

A. E. Hansen

Consulting Architectural Engineer

THE gas companies of today are most seriously confronted, especially in the older cities, with the shortcomings of the gas companies of a decade ago. Time and again we of today suffer by reason of bygone omissions or inadequate pipe sizes in buildings installed not so many years since, and I presume that for many years to come the past conditions will be sources of complaints and expense to the gas companies or to the owners of buildings.

I want to say that we are now facing a new day in the gas industry, thanks very largely to the activities of your association and its individual members and I would like to quote here from the article in the August issue of the "Bankers Magazine," written by no less a person than the Hon. George B. Cortelyou, president of the Consolidated Gas Company of New York. "The day of comparative isolation for the industry is over. It has stepped forth to take the place that rightfully belongs to it by virtue of its importance as a great agency of public service, supplying a commodity that is essential to the health, comfort and well being of millions of our people. If it ever did hide its light under the bushel, that is no longer true. Today it is telling its story to the public and the public is responding with many evidences of interest and approval. Few industries have such a wealth of material to draw upon and few can match it in the element of human appeal, for it is based upon service to that most vital and cherished institution, the home."

In looking over the records available to me I find that the annual sales of gas for a representative gas company in each state of the Union increased on the average from 1914 to 1924 by 148 per cent. I find further that there are over 1,000 manufactured gas companies in the country which serve about one-half of the population of the United States with gas.

Guiding the Brains Behind Building

With such a phenomenal growth which has been largely due to the tremendous growth in the building industry, can the members of your association afford to do anything else but to properly guide the brains behind the building industry in the channels which will lead to both satisfied consumers and satisfied producers? I cannot see how you can possibly avoid the issue in all fairness to yourselves and in all fairness to your customers.

Now, when I speak of the brains behind the building industry I have in mind particularly the generals who stand in the forefront and who direct the

* Delivered at the meeting of the Commercial Section, A. G. A. Convention, Atlantic City, October 14, 1926.

planning and execution of the buildings themselves, namely the architects. They are the filters of the building industries. They must sift and choose in the final analysis the mass of building materials, equipment, and systems advertised through this broad land. All their work necessarily goes along at top speed and generally at all hours. They cannot be bothered with the usual run of solicitors and salesmen. When their work comes up to a point, however, where questions involving the interests of the gas companies must be settled, they want action and they want it quick. They must have the services of the gas companies' representatives and these services must be based on the utmost confidence.

Every gas company that is a member of this association should have an architect's service bureau or department and it should maintain it on a plane at least equally as high as any of its other departments. The entire gas company's organization should be in sympathy with the aims of the architect's service bureau. The latter should of course have a well defined policy. It should never try to sell, but always try to serve. It should never, except in rare instances, request, but it should always recommend.

The Work of the Bureau

Architect's service bureaus should keep themselves thoroughly advised on proposed buildings by means of building reports, building and real estate journals, and City building records. They should maintain detailed records of at least all important projects and of their successive interviews with the architect.

It should be the business of the architect's service departments to acquaint the architect with all of the ramifications of gas service and to establish itself in the architect's mind as expert adviser on all questions pertaining to gas piping, gas service, meters, house heating, water heating, domestic and industrial appliances, refrigeration, locations and sizes of meters, service and distribution pipes.

It will be found time and again that the requests for assistance will be limited by the architect to sizes and locations of service and distribution pipes and of meters. The competent architectural service representative will gradually and unostentatiously advance to the architect in such instances his own suggestions for the consideration of larger sized kitchen ranges having not less than 18 inch ovens, house heating by gas, water heating by gas, gas refrigeration, and such domestic and industrial gas appliance as may seem desirable for use in the particular building project. The more recent progress and real achievements in house heating and refrigeration, which have been accomplished by the aid of the research laboratories of your association and of its members entitled the Gas Service Bureaus to suggest their consideration to the architect without hesitation.

The House Heating Field

The architectural service departments cannot overlook in the field of house heating the competition of the oil-burner manufacturers, whose product rose in the last six years by about 250,000 burners, but the gas burners have so many advantages that there should be no unusual difficulty for the gas industry to overcome the lead established by the oil burner industry.

I find that there are nearly eight thousand complete house heating installations by gas in Portland, Oregon, and nearly fifteen hundred in Baltimore, Maryland. This is a wonderful advance in the pioneer work of house heating by gas.

I believe that your association and its members individually should interest themselves most vitally in helping citizens of your community to overcome the smoke nuisance. Architects as you know are in general broadminded men who have the welfare of their communities at heart. They will appreciate the efforts which your companies will put forth in overcoming the smoke evil. They know that their beautiful buildings are being defaced, that their structural stones are being corroded, that their structural metals are being damaged, that the windows of their buildings are being coated with soot, that their ventilation systems have to provide for filters to furnish soot-free air. The architect will appreciate also the tremendous waste of fuel which exists day after day and which is due to incomplete combustion of coal or oil.

Refrigeration by Gas

May I say a few words also about refrigeration by gas. In this field your architectural service bureau should be fully posted and wide awake. Mechanical refrigeration has grown by leaps and bounds. It is used in our domestic, commercial, industrial and scientific life and I just want to barely mention as examples the preservation and distribution of perishable food stuffs, cold storage, cooled drinking water, artificial ice-making, and cooled theatres, hotels and laboratories. The installation of domestic refrigeration machines has forged itself to the foreground in apartment houses and apartment hotels. It is probable that there exist several hundred thousands of household refrigeration machines.

Your association and some of its individual members have made careful research into the refrigeration field to determine the possibility of the use of gas in this connection. I believe that this problem has been solved satisfactorily by you and that it has been established that the absorption system of refrigeration with the use of manufactured gas as a fuel has undreamed of opportunities.

Classification of Architects Necessary

To keep architects and engineers properly informed of gas developments it seems to me that you should first classify the architects, and I would suggest that you give consideration to the following classification which somewhat resembles that made by Robert B. Mahn, who is a member of your association and of several of its committees and who is in charge of the Architects Service Bureau of the Consolidated Gas Company of New York.

Class one: The most prominent firms which maintain a complete architectural service for a large volume of business.

Class two: The more prominent firms which do not maintain such complete service but depend on responsible expert engineering firms.

Class three: The firms which have only a small force of assistants and which depend on responsible expert engineering firms.

Class four: The individual architects who operate alone or with a few assistants and who usually depend upon contractors for advice on their architectural engineering.

Class five: The architects who limit themselves to small jobs and alteration work.

Of course you must understand that any such or similar classification has no definite lines of demarkation. For instance, there are architects which might fit under classes one, two and three, because they might retain outside engineering expert firms and still have their own complete engineering organization; or again the fourth and fifth classes might gradually expand into the third, second and first classes. In general, however, I believe that the classification given will answer the purpose.

In my opinion the architects of the first and second classes, and by that I mean also the outside engineering experts whom they may employ, should be given the fullest measure of personal service in addition to the routine service required by the third and fourth classes.

Routine Service

Under routine service I include particularly the mailing list with all of its adjuncts. Every architect should be on the mailing list. The material that should be mailed should include useful information on any of the uses of gas in any of the arts. It should be prepared by your technical laboratories and your advertising men in semi-technical fashion. Some architects prefer this information in pamphlet form, others in book or catalog form. It is difficult to recommend which to follow, but I believe that a substantial, neatly printed and illustrated book furnished with the compliments of the gas company, inscribed with the name of the architect, in limited instances perhaps sent with the compliments and autograph of the president of the gas company, filled with well-assorted tables, diagrams and other useful information on gas and its uses, will be the most welcome friend in the offices of the architect. If your association and its members intend to follow out a well-defined program of continuously supplying architects with new information, it might be advisable to prepare these books in an attractive loose leaf form with substantial cover and binding. Otherwise, having in mind the rapid development of the gas industry in these days, it will be probably necessary to replace the useful information books with new issues at least once in three to five years.

Results Will Eventually Accrue

I have already referred to the personal work and the personnel of the Architects' Gas Service Departments. You may be certain that for a while you will not find any increase in business due to these trail-blazers, but if you have the right men, with the right spirit, and with the full co-operation of your entire organization from the president down, you will find that there will be no more fruitful field than that which our architects control.

You may rest assured that when your association and its members furnish to the architect expert services peculiarly designed for the architect there is bound to result naturally and surely a continued sound growth of the proper utilization of approved gas appliances and an installation of adequate piping, metering and gas service systems.

I would not like to leave unsaid a word about the loyalty of the architect to those who are loyal to him. For many years it has been my observation that, as a class, the architect prefers to deal with those who give him satisfaction by faithful service, prompt attention and square dealing. I have known architects to even go to the mat with the owners in behalf of firms, or individuals, of proven value and I wish to say to you that if your service departments convince the architect that his and his client's interests are bound up closely with your own, that your companies' recommendations for gas uses are strictly limited to such instances in which it is clearly demonstrated to be to the client's advantage, you will then have grown a tree that will bear bountifully and more bountifully as the years go by and as the branches of your art increase.

☼ ☼ ☼ ☼

Architects! Builders!
Women want oven heat regulators
on their gas ranges
MRS. PROSPECT has discovered that an oven heat regulator on the gas range means more freedom from the kitchen, saves weary hours of "watching," keeps the cooking running smoothly.
She has been counting on having one in that new house or apartment, so that she, too, can put her meal in the oven, regulate the heat to the proper degree, and forget about the kitchen till time to set the table. She will cast a discerning eye on the stove you have installed or the space provided for the stove and measure it up to her modern standard of kitchen efficiency and convenience.
Draw gas range satisfaction right into the blue prints, and select a range that will appeal to every woman who gives the kitchen of your property her expert appraisal. She's the one to please, and she has her heart set on an oven heat regulator!
"Make the kitchen range a selling point!"
Consultation on gas piping and the selection and installation of all appliances gladly given without charge. Just call.....
(Your Name and Address)
A.G.A.-652

Gas Company Ads Should Contain Architects and Builders Appeal

Welding and Cutting With City Gas*

Details of interesting new developments in this field

J. Geartner

ONE of the most interesting developments for the use of city gas has been developed during the past year by The Alexander Milburn Company, Baltimore, Maryland. This company has been pioneering for twenty years in the manufacture of gas welding and cutting equipment, and recently introduced welding and cutting torches for cutting steel of varying thickness from ⅛ to 24 inches and for welding cast iron up to and including ½-inch thick. This new development is another great stride in minimizing operating costs in welding and cutting operations.

It has been found that in cutting steel with city gas, particularly in the case of plate cutting, a sharp edge is maintained which did not occur when using a cutting torch in conjunction with certain other types of gases. The smoothness of the cut with the new type of torch is remarkable and where care is exercised by the operator the face will appear as though it had been sheared or sawed. Another peculiar feature is the notable absence of metallic slag on the under side of the cut, which eliminates a great deal of labor, particularly in fabricating sheet steel plate. Heretofore it had been found necessary to machine the plate. This torch has been so far developed that it is now possible to begin a cut within three seconds after the flame is applied.

Two Phases of Utilization

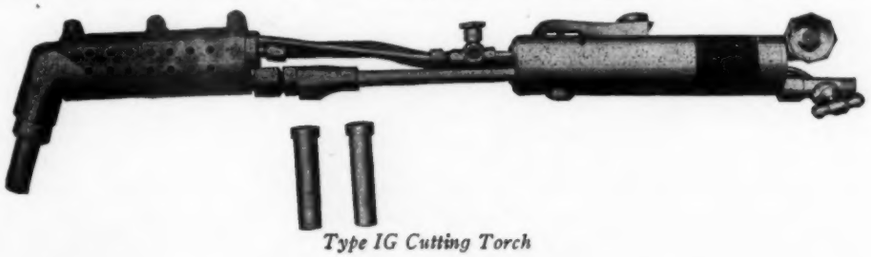
There are two important phases that must be taken into consideration when cutting with city gas. In the first place the smaller industrial plants, that can use city gas, have line pressure only, while the larger plants maintain and are able to install compressors for boosting the pressure. Hence two torches were developed. One, Type IG which is fitted with a super heater that is incorporated in the body of the torch and which heats and expands the cutting oxygen, raising its temperature approximately to 200 degrees F. prior to combustion. This increases the temperature of the gases at the torch tip, the rate of flame propagation in the burning mixture and reduces the oxygen consumption from 25 per cent upwards.

The heat, applied before the oxygen leaves the cutting tip, results in expansion of the gas, thus permitting the same exit velocity through the tip, but greatly reducing the weight of oxygen lost in performing the mechanical work.

Oxygen Temperature Important

The question of oxygen temperature becomes extremely important during winter months when cylinder oxygen is subjected to temperatures below zero in some sections of the country. A temperature of 200 degrees centigrade is obtained with the torch at a negligible cost. The economy it produces in the cutting oxygen reaches as high as 35 per cent. In recent tests conducted at the plant of The Alexander Milburn Company, the saving in using both oxygen and city gas in conjunction with the superheater type torch amounted to 39 per cent in the cutting of heavy billets.

The saving of oxygen with the superheater type torch becomes greater when it is used on work involving high rates of oxygen flow, as in the case of cutting heavy steel risers, heavy steel billets and the like. The high rate of flow and the considerable pressure drop from a 2,015 pounds per square inch in the cylinder, cools the oxygen due to the internal energy of free expansion. The resulting low temperature oxygen retards cutting and its increased density causes considerable wastage.



Type IG Cutting Torch

Torch for Low Pressure

The LPG City Gas Torch will not show as much saving in oxygen as will the Type IG Superheater, due to the oxygen not being preheated and expanded, but a great saving has been made by the smaller industrial plants, who do not find the installation of a compressor or booster pump warranted. In these cases this torch can be used with ordinary 4-inch line pressure and also with boosted or higher pressure gases.

Welding With City Gas

For a number of years small industrial plants, such as stove manufacturers and others, where a great

---

* *Editor's note: —The use of city gas for welding and cutting purposes is not a new idea, but it is a field which has not been developed very far as yet. This article contains some interesting information on new developments in torches specially made for use with gas. A table of comparative results on gas and acetylene is given, these results being obtained, it is understood, from actual tests.*

amount of silver soldering, brazing and reclamation of small castings is carried out, have been calling for a torch that would weld or braze with city gas. The large industrial plants have also been anxious to use such a torch for heavier work particularly on malleable and cast iron. The use of city gas instead of gases yielding higher temperatures, has been made possible by the Milburn Type HMCG Welding Torch, which is made for welding and brazing with city gas only. A considerable saving has been effected in this way. It is a well known fact that a weld is even stronger than the original metal if the operation is properly performed and with the use of city gas which produces a softer flame cast iron welds are more easily machined than those made with other gases.

The conditions on these tests were similar. Besides the great economy effected with the Milburn Illuminating Gas Torches, the following advantages were noted:

Better penetration into the metal; greater cutting speed; extremely narrow kerf with sharp, clean edges; cuts free from slag; no case hardening.

Advantages of the Milburn Illuminating Gas Torches

Type LPG Type IG

Cutting 5-inch by 5-inch Billets—Time 1 Hour

	Acetylene Cutting Torch	LPG Illuminating Gas Torch	IG Illuminating Gas Torch
Time per 5" x 5" cut	1 min. 10 sec.	1 min.	1 min.
Oxygen used	696 cu. ft.	696 cu. ft.	480 cu. ft.
Gas used	54½ cu. ft. (Acetylene)	72 cu. ft. (City Gas)	108 cu. ft. (City Gas)
Price per ft.	2½c. cu. ft.	80c. M cu. ft.	80c. M cu. ft.
Cost	$10.06	$8.75¾	$6.08-2/3
Saving		12-1/3%	39%

.04¼c. cost of oxygen per cu. ft.

Year's Close Promises Good Business

Jobbing trade feels result of increasing market decentralization

L. W. Alwyn-Schmidt

THE news of the early closing down and complete liquidation of one of America's largest wholesale houses, recently published by the New York press is indicative of a far reaching change in the business organization of the country. The case is not a singular one. It is duplicated in less spectacular form in hundreds and hundreds of instances. It only shows how the growth of trade all over the country has changed the technical requirements of commercial distribution.

It is not so long ago, not more than twenty years, that the nation's retail traders considered New York and Chicago their almost sole purchasing centers. From there his majesty the salesman would set out and call on his customers with the news, the jokes and the merchandise of the commercial metropolis. Now things have undergone a most radical change. The army of salesmen sent out by the metropolitan jobber has dwindled to a mere handful. The salesmen themselves have located in more convenient distributing centers. Where formerly a few large jobbers and wholesalers reigned almost supreme, today there is an ever-increasing number of smaller jobbers with local and regional distribution.

Change Most Noticeable in West and South

This change is especially noticeable in the growing commercial cities of the west and south. But the east has its share of this new development in distribution. Generally speaking it has been beneficial to the commercial community, but it has also produced quite a new set of commercial and financial problems, the full extent of which is not yet fully appreciated.

By shifting the weight of distribution from a few big cities to a large number of minor size, distribution has become more diversified. There is a more immediate contact between jobber and dealer. This has facilitated considerably the hand-to-mouth policy of purchasing which has been characteristic during the after-the-war period. Credit risk and credit responsibility have been shifted from a few shoulders to many. The burden has been transferred from the large centers to the smaller cities, creating a deflection in the flow of money especially noticed by the medium sized banks. Most financial settlements between jobber and dealer are now made in the latter's immediate neighborhood.

Effect on the Manufacturer

But the most important development, and one which will show its full force only in a few years from now, is the changed position of the manufacturer.

While in the past the manufacturer concentrated

(Continued on page 592)

HOME SERVICE IN HALIFAX

THE Home Service Department of the Nova Scotia Tramways & Power Co., Ltd., has been very active this fall. The last lesson of the course in specialty cooking was recently given in the company's model kitchen. "Desserts" was as popular a subject as any in the course, which included lessons on salads, muffins, biscuits, cakes and cookies.

When this course was first announced at the opening of the kitchen for the year, the registration was so large that all could not be accommodated at one "sitting." Consequently the course is being repeated.

The attractive atmosphere of the kitchen which is furnished in the most modern way has drawn many people who are always anxious to come back. Miss Russell, who conducts the demonstrations, is a graduate of a well known school of household economics, Macdonald Institute, Guelph.

The classes are as well attended as they have been in the past. The special hallowe'en demonstration was most attractive. From the top of the cupboard a trio of jack o'lanterns with eyes and nose illuminated grinned down at the audience. Tiny jack o'lanterns made from oranges helped to carry out the hallowe'en idea.

✿ ✿ ✿ ✿

DOMESTIC SCIENCE TEACHERS LISTEN TO HOME SERVICE DIRECTORS

FORTY-SEVEN domestic science teachers from high schools all over Westchester recently were guests of the Home Service Division of the Westchester Lighting Company at a dinner at the Hotel Commodore, New York.

Mrs. Cecil G. Harvey, director-in-charge of the division, after extending a cordial welcome to her guests, gave a talk on the aims and objects of the division. She explained the service was distinctly educational and that it was given in a spirit of friendly co-operation.

"Home Service is indeed 'Service for Happiness,'" Mrs. Harvey said, "particularly in Westchester, where we all live in the same county and have the same problems and conditions affecting us. We want to help all the housewives in the county if they will only let us. More especially, we want to work with you who are teaching the children of the county." Mrs. Harvey added that the educational work of the division covered not only cooking problems, but also many subjects of interest in the home. She urged the teachers to take advantage of the varied and instructive service and to call upon home service at any time.

Mrs. Harvey introduced Miss Margaret Hutton, B. S. domestic science director to the teachers. Miss Hutton gave a brief outline of her work and what it offered. Mrs. Sarai Waugh, the Lighting Company's home lighting specialist, spoke interestingly of her work and what she was doing to make the home a happier place to live in. Mrs. Harvey has since received many letters from the teachers thanking her and offering their hearty co-operation.

Domestic Science Dinner Given by Westchester Lighting Co., Hotel Commodore, New York City, October 23, 1926

✿ ✿ ✿ ✿

INTERESTING HOME SERVICE JOTTINGS

MISS Sweeney, Empire Gas and Electric Co., Geneva, N. Y., finds a good way to get an audience through the wives of the men in the company as they are usually members of clubs and are always helpful.

Cooking Classes for Deaf Mutes

The Home Service Department of the Consolidated Gas Company of New York has successfully conducted a most enthusiastic and interested cooking class of 80 deaf mutes.

Miss Pidgeon's Cooking Class for Children

Miss Marjorie E. Pidgeon, known as "The Girl in White," director of the Home Service Department of

The Brooklyn Borough Gas Company, Coney Island, N. Y. Miss Pidgeon conducts a cooking class every Saturday morning for children. It has been most successful. A regular course is given, membership cards are issued and diplomas awarded to those completing the course.

Miss Jessie B. Lane Broadcasts Cooking Talks

Miss Jessie B. Lane, director Home Service Department of the Adirondack Power and Light Corporation, Schenectady, N. Y., in her radio talks over WGY invites her listeners to join the "radio cooking class." They register each time by mailing a card, with name and address. This method was found effective because it proved of interest and assistance to homemakers in other sections of the country.

¤ ¤ ¤ ¤

HOME SERVICE ACTIVITIES IN PROVIDENCE

THE Home Service Department of the Providence Gas Co., through Kathleen Atkinson, director, writes us about some interesting events which recently took place under the auspices of that department.

A Radio Tea was recently held in a lecture hall seating 215 people, and by the time the tea was scheduled to start, the hall was nearly filled. A program of instrumental numbers, songs and stories was put on by the artists of WEAN station, through which Miss Atkinson broadcasts housewives chats three times a week. The women seemed to enjoy meeting these artists very much. A very attractive platform was arranged, decorated with screens and palms, on which there was a very fine tea-table. Tea was served as well as little wafers, the receipt of which has been in demand ever since. The tea was a very excellent publicity "stunt" inasmuch at it brought together a number of women who had never been in the home service premises before but who have been consant listeners to the program over the radio. New friends were undoubtedly gained for the gas company through this feature.

Home Service Radio Club Party

At another time a meeting was held for the Home Service Girls Club. Quite a large group of children were brought into the gas company premises by this entertainment. The children played all sorts of games and were served with refreshments and appeared to have an altogether happy afternoon.

The editor feels that this is again a very much worth while activity of home service, for it is bound to make many friends for the gas company.

A Very Active Department

The Home Service Department of the aforementioned company is a very active department. The department has a desk in the downstairs office and its telephones are kept busy throughout the entire day answering queries of all kinds. It has become almost necessary to have one person attend to the telephone alone. There is also a home service desk on the sales floor which is constantly attended by a "girl in white" from the Home Service Department, who answers questions and gives out information of all kinds. A card file is kept at this desk, and the activity of the department is amply illustrated by the fact that in September nearly 51,000 cards were taken and in October 54,407.

¤ ¤ ¤ ¤

HANDY FILING SYSTEM FOR RECIPES

MISS Ruth Emmons and Mrs. Hoar of the Home Service Department of the Kings County Lighting Company, Brooklyn, New York, have devised a handy filing system for recipes of various kinds, which enables them instantly to place their hands on the one desired.

This consists of an all-steel cabinet about the size of a standard letter file, divided into twelve drawers, which are again divided in half lengthwise to accommodate a card 3 inches by 5 inches on which a recipe is typed.

These recipes are classified under a general heading, such as cake; and again are sub-divided into various kinds of cake, for example, sponge cake, fruit cake, cheese cake, etc. Other general headings including vegetables, soups, meats, pies, entrees, desserts, preserves, pickles, etc., are treated in a like manner.

One thousand copies of each recipe are mimeographed and about 200 of each are kept in the active file; the balance are held in reserve in a convenient place properly marked for future use.

All that is necessary when a call comes for a certain recipe is for the clerk in charge to refer to the section of the file containing this particular information, extract a card, hand it or mail it, as the case may be, and the request is fulfilled. All this in less time than it takes to describe this method.

This means of handling recipes has been found a time saver to this organization and will undoubtedly prove of equal value to other home service directors.

¤ ¤ ¤ ¤

HOME SERVICE SPEAKERS AT PUBLIC MEETINGS

ONE of the newer functions of the Home Service Department appears to be to furnish speakers to address public meetings on matters that pertain to the home. It is, of course, natural that these meetings should be such gatherings as Mothers' Clubs and other associations of women-folk. Thus, for example, the Brooklyn Union Gas Company of Brooklyn, N. Y., advises that the Home Service Department of the company has been requested to furnish a speaker at a meeting of a Mothers' Club in one of the public schools of that city. The importance of such proceedings in public affairs cannot be over-estimated, not only in that it is part of the general program that was advocated in Atlantic City, namely, that gas employees should take a greater interest in communal affairs, but it is also significant in that it gives the home service worker a chance to talk about a phase of the gas industry that is nearest to the heart of all women, namely, the running of a home.

As The Journal Views It

DEHYDRATION OF GAS

The first part of a very important article appears in this issue of the American Gas Journal. It is concerned with a highly technical subject, the dehydration of manufactured gas. The excellence of this article consists in the great care that has been taken in giving a most comprehensive description of the general principles of gas dehydration and of all the important phases of the subject. Thus, the disadvantages of moisture in gas are described, the extent to which dehydration must be carried out is discussed, the methods available are depicted, the cost of the operation compared with the benefits incurred are compared and the disadvantages outside of extra attention and added operating costs entailed are examined.

One feature of the article which deserves special attention is the accuracy with which various dehydrating methods are described and the care with which costs, power requirements, etc., are worked out. This article makes very interesting and valuable reading to every gas engineer who is interested in this particular subject.

¤ ¤ ¤ ¤

EDUCATING THE INDUSTRIAL GAS SALESMAN

A topic which received careful consideration at the recent convention was the education and training of industrial gas salesmen. This is a problem of more than usual difficulty, for it has been found that there are two fundamental qualifications that distinguish the successful industrial gas salesman, each of which would indeed ordinarily suffice were it found in a single individual. What is meant is simply that the industrial gas salesman must be somewhat of an engineer and also a salesman. The question involved is how far his engineering training should be protracted, and also just what weight should be given to developing selling ability. In other words, what shall be done? Shall the engineer be principally trained in salesmanship or in engineering?

It appear that the answer can be given to this problem only after it had been accurately ascertained just what kind of work the industrial gas salesman will be called upon to do. And this depends in a large degree on the general policy that is adopted by the gas companies and by the gas industry as a whole in developing the industrial gas field.

Is the individual gas company to build up an organization of furnace experts and furnace designers who will go out and sell gas as an industrial fuel and then the properly designed unit in which it is to be used? Or, is the industrial gas salesman merely to sell the prospect in a general way on gas and then call in to his aid the expert on design and construction of gas fired furnaces? It is clearly seen that if the first method is pursued, then, the industrial gas salesman must be thoroughly educated as an engineer but must have as well considerable selling ability. But in the second case it is evident that he must principally have selling ability, and his engineering education and knowledge of thermal matters need be just sufficient for him to be able to talk intelligently to his prospect.

It appears that the more practical and certainly easier of the two methods is the latter, particularly from the standpoint of educating and training the salesman. What should be emphasized in this case is the selling ability of the salesman, not so much his technical knowledge of thermal matters or of the design and construction of furnaces. For this is, after all, the essential function of the industrial gas salesman. In other words, he is called upon essentially to sell his prospect on the use of gas as industrial fuel. When he has once performed this function, his primary duty has been fulfilled and he is then ready to call upon thermal experts and furnace designers to finish the sale which he started.

It certainly appears that the sale of gas for industrial purposes is essentially a selling proposition at the outset anyway. The salesman and the industrial gas engineer must have real selling ability and a pleasant personality. For these are the requirements of every salesman. Thus, if the engineer who has selling ability is trained properly. he will unquestionably turn out to be a successful industrial gas salesman. On the other hand, it is very doubtful whether

it will be possible to convert an ordinary salesman into an industrial gas engineer, if he is required to understand the design of furnaces and the details involved in the operation of each industrial application of gaseous fuel.

On the other hand, if he is merely called upon to become familiar with general thermal matters, he can be trained to be a successful gas salesman. Furthermore, on this basis men from both fields, that is the engineer and the salesman, can be drafted, educated and trained to sell gas for industrial purposes.

YEAR'S CLOSE PROMISES GOOD BUSINESS

(Continued from page 588)

his efforts on the large jobbing centers, he has now to deal with a much wider market requiring new and added sales effort. Many of the salesmen formerly working for large jobbers have, therefore, transferred their allegiance to the industry directly, or, as the case is in the cotton goods industry, have joined the large brokerage houses and mill agents.

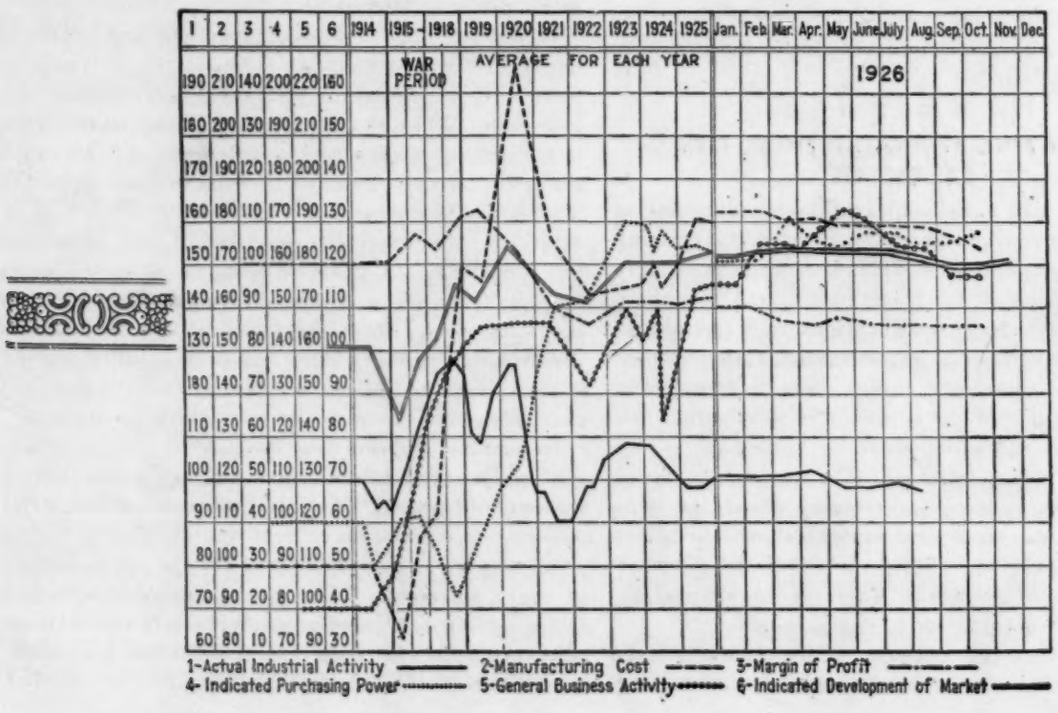
There is no doubt that this process of diversification of distribution will continue for a considerable period. There is nothing to stop it after it has once gotten under way. It is the natural outcome of the growth of the American market. It is, therefore, important that the market should realize the full significance of this movement and should organize itself in such a manner so as to take care of its new requirements with the least loss. Casualties will be unavoidable, because there are always business men who fail to see the writing on the wall, and are consequently overtaken by the storm when it breaks. On the other hand there are others who have read the message correctly and who have taken the necessary precautions. They have found an easy remedy by presaging the trend of affairs and meeting the decentralization of their market by a corresponding decentralization of their own sales organization. These firms have formed branch houses in convenient centers and have in this way fitted their business more closely to the demands of their new market. Others have changed to new lines. And there are thousands and thousands of jobbing houses and wholesalers who will have to take the same step during the next half dozen years or so.

Careful Handling Required

The transition period will require careful handling. It will need close co-operation of the market controlling agencies, financial, industrial and commercial. It will necessitate a very close hold upon the credit situation. The truth of this is being brought home again during the present fall and winter season. Much of the financial uncertainty of the last few months has no doubt been created by the desire of the banks to take care both of the changes in the commercial community and the exceptionally heavy requirements of the industrial producer.

The first of October and the weeks following are always anxious times for the banks.. Not only are

(Continued on page 594)



INDUSTRIAL GAS LESSONS

IF IT'S DONE WITH HEAT YOU CAN DO IT BETTER WITH GAS

Lesson No. 143

Combustion

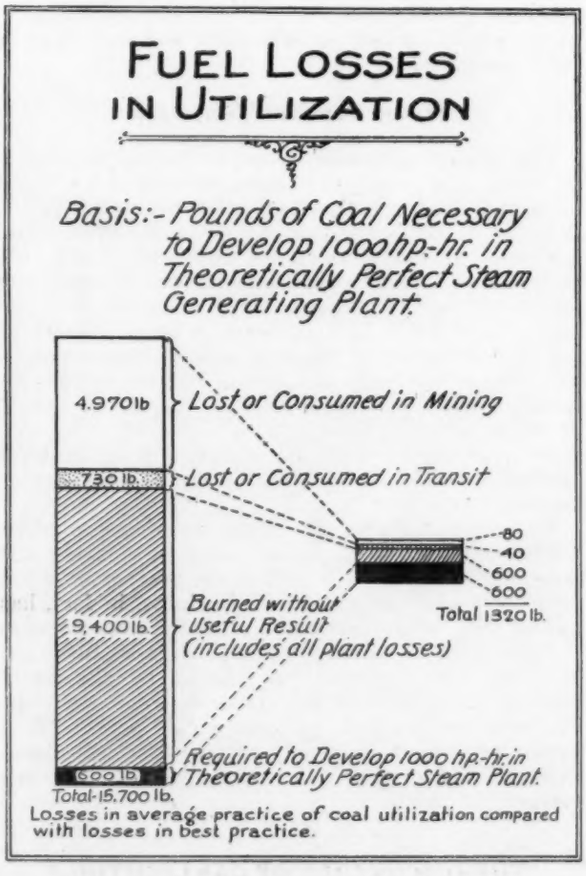
A Furnace Not a Gas Generator

The foregoing experiment has been described in these lessons with the express purpose of bringing to the mind of the reader the fact that the gas company, in manufacturing gas, is performing a function which is of great importance to those who use fuel. For the gas company is converting solid and liquid fuel into gaseous fuel, an operation which is conducted with the greatest of skill and the highest of efficiency, so that maximum economy is obtained in the process. On the other hand, if this same process is carried out in the furnace that may be heating a boiler for the production of steam or for the heating of homes or for any other of the numerous purposes for which heat is employed in the industry, great inefficiency is incurred. For the furnace is not intended as an apparatus for the generation of gaseous fuel. It is essentially a device in which fuel is burned to create heat. If the fuel that is fed to it is not of proper character, then the efficiency of the process will be low, but when the fuel is in the correct condition, then it is possible to obtain very high efficiency in the combustion process.

There is no question but that fuel in the solid or liquid form is not in the proper condition for the attainment of high efficiency in the combustion furnace. For where the furnace falls down is in the conversion of this fuel into burnable form, which means the gaseous form. On the other hand, when the fuel is fed to the furnace in the form of a gas, conditions are most favorable for the attainment of maximum efficiency.

Efficiency in Heat Production and Use Important

It is a fact that one of the major problems of industry today is the attainment of efficiency in the production and use of heat. The demand for heat is continually increasing, and the question is continually rising as to what is the best way in which to produce this heat. In former years very little attention was paid to thermal efficiency. This refers particularly to our own country where fuel was so plentiful and where competitive conditions were not so strong as they are today, both in the domestic and foreign markets. However, today thermal efficiency is looked upon as being of considerably greater importance than in former years. All sorts of factors enter into this question, such as labor costs and the like. There is no real economy in using costly labor to run heating operations in which furnaces and fuels are employed that are not efficient. All these factors are working in favor of the adoption and use of the more efficient fuel, no matter if it happens to


FUEL LOSSES IN UTILIZATION
Basis:- Pounds of Coal Necessary to Develop 1000 hp.-hr. in Theoretically Perfect Steam Generating Plant.
4,970 lb
Lost or Consumed in Mining
730 lb.
Lost or Consumed in Transit
80
40
600
600
Total 1320 lb.
9,400 lb.
Burned without Useful Result (includes all plant losses)
600 lb
Required to Develop 1000 hp.-hr. in Theoretically Perfect Steam Plant.
Total-15,700 lb.
Losses in average practice of coal utilization compared with losses in best practice.

be more expensive one. Gas is such a fuel. It is more expensive than coal—there is no question about that, but it can be used with a very much greater efficiency, and in the last analysis, the economy of the process will be determined, not so much by the price of the fuel as by the effectiveness with which it is used and the all-around efficiency of the process.

Just to illustrate what is meant by ineffective consumption of the fuel coal, the accompanying figure shows the losses in average practice of coal utilization in the development of 1,000 h. p. in the theoretically perfect steam generating plant compared with losses in best practice.

With this idea in mind we will leave for the present the subject of the combustion of fuels, return to it later and discuss it in a much greater detail. Our attention is now directed to the study of the properties of the various manufactured gaseous fuels.

¤ ¤ ¤ ¤

(Continued from page 592)

government withdrawals very heavy during this period, but interest payments and harvest financing make obligatory the holding of large liquid money reserves in the vaults, which are put out of reach of the credit-seeking manufacturer and merchant, at least temporarily.

Money Pressure Temporary

The present pressure upon the money market is no doubt of a temporary character only and will not have any far-reaching effect upon business. But it is highly desirable that the industrial and commercial borrower should come more conversant with the facts, so as better to time his own credit needs and distribute them more conveniently over the year. To make "due" as is now the case, a large volume of commercial paper at these periods of high financial pressure is not only dangerous but makes its renewal almost impossible even if the banks should desire to do so. This condition is bound to become more pronounced with the growth of the nation's business and should be dealt with in one manner or another in the near future.

Excepting the pressure upon the money market, which is likely to decrease somewhat during the coming months, there is little in the present situation to cause trouble of any kind. Business, in fact, has moved very satifactorily and all indications point in the direction of a very good Christmas turnover. This opinion apparently is shared by the retail market, and orders for November delivery are large. The weather prophets promise a cold winter. If it comes early enough, it may help to accelerate business and add another good-sized slice of this year's commercial turnover.

¤ ¤ ¤ ¤

"THE DISCOVERER OF GAS LIGHTING"

This is the title of a book written by W. T. Layton, fellow of the Royal Historical Institute and editor of the co-partnership Journal of the South Metropolitan Gas Co. of London, England. The book is published by Walter King, Ltd., at the office of the Gas Journal, London.

The book deals entirely with the life of John Clayton, priest and philosopher, who lived between the years 1657 and 1725 and who is called "The Discoverer of Gas Lighting."

This book is extremely interesting reading. It is a very human document in which the biographical details of the life of Clayton are recorded with great accuracy. It is illustrated with many interesting photographs. At the end of the book, the paper entitled "The Spirit of Coal," which Clayton wrote, is published in full, together with a fac-simile of the manuscript which is now made in the British Museum and a note on Clayton's experiments on steam.

¤ ¤ ¤ ¤

AN APPLIANCE STORE ON WHEELS

Tampa Gas Co. Adopts Novel Method With Success

Something new and decidedly novel in the method of selling gas burning appliances has been put into operation by Rosco Nettles, manager, The Tampa Gas Company, Tampa, Florida.

The accompanying cut shows an appliance store on wheels. This truck is equipped with a tank of compressed gas. Instead of waiting for the housewife to come to the gas company's salesrooms, the truck is driven up to her front door, or around to the kitchen, and the lady is invited to witness a

The Traveling Store

demonstration. All of the appliances are connected to the compressed gas tank, and each appliance becomes a working demonstration.

This method of selling appliances, and incidentally gas, has proven very successful. In a period of about ten days there were sold 58 ranges and water heaters, in addition to other appliances.

The Tampa Gas Company, under its present management, has made wonderful progress. In about fifteen years the sales per annum have increased from about 50,000,000 cu. ft. of gas to 700,000,000 cu. ft. There are about 17,000 meters in service. During the past year the works have been rebuilt.

NEWS OF THE GAS INDUSTRY

Lowell Gas Co. Exhibits Blue Star Home

Lowell, Mass.—The Blue Star Home Beautiful was opened for public inspection on Columbus Day and was kept open until the 30th of October.

This unique home, resulting from the co-operation of the Highland Realty Associates, the Robertson Company and the Lowell Gas Light Company, was a vivid demonstration of the fact that a house need not be extravagantly high in price in order to be beautiful, livable and permanently charming.

The first glimpse of the two and

The Blue Star Home Beautiful

one-half story Colonial type house left a sense of fitness and loveliness. Set behind spacious lawns on a lot of over 11,000 feet of land the ivory of its walls and the green of its shutters combined with the rich red of its tapestry brick steps to form a colorful picture.

The interior of the home was equally delightful. There were six rooms of pleasant proportions and blessed with many windows. The living room proudly displayed a handsome mahogany suite, and an artistic array of smaller pieces of furniture in mahogany and in gay red lacquer. An open fireplace, fitted with a gas Radiant fire, added cheer and brightness.

The dining room was an excellent reproduction of the early American period with its suite of Hepplewhite design. The octagonal dining table and the 66-inch buffet with its facing of burled mahogany on doors and drawers and its substantial pedestals on either side, bore strongly the imprint of the Colonial influence.

Upstairs there were three bedrooms, one displaying a Louis 16th suite; one, with a graceful suite of Duncan Phyfe design, and another with a Colonial reproduction in solid mahogany with a red mahogany finish.

The kitchen was a model of neatness and efficiency. Among the unique features of the construction of the Blue Star Home Beautiful was the use of Armstrong Cork Board for insulation.

With the Blue Star Home Beautiful thus lined with cork board, it was possible for the shining rectangular gas boiler in the cellar to furnish all the luxury of house heating with gas at a cost equivalent to heating an uninsulated house with anthracite. The gas boiler is automatic, dependable, noiseless, odorless and because it is connected by pipe line with the holders of the Lowell Gas Light Company it ensured a supply of fuel that will never fail. The owner of a gas boiler need see his boiler only twice a year, once in the fall when he touched a match to the burner; once in the spring when he turns off the flow of gas. Should service of any kind be needed in the meantime the Lowell Gas Company furnishes it at any hour of the day or night without charge of any kind.

Other modern gas service appliances installed by the Lowell Gas Light Company in the Blue Star Home Beautiful included a Radiantfire for the living room fireplace, a Kompak Gas Water Heater to ensure an unfailing supply of hot water whenever needed from any faucet marked "hot," and a modern gas range with the Lorain Oven Heat Regulator.

Contract Let for $4,000,000 South Plains Gas Line

Amarillo, Tex.—The Texas Gas Company recently let the contract for the gas line that will serve more than a score of cities in the South Plains. The project entails the expenditure of more than $4,000,000, according to officials.

The contract for the distributing stations in the cities to be served by the gas line was let to the firm of Williams Brothers, of Tulsa, Okla. The cities which are already under franchise of the Texas Gas Company are Lubbock, Slaton, Plainview, Floydada, Lockney and Tulia. Several other towns are expected to vote franchises to the company within the next few days, according to officials.

Officials of the gas company announced last night that work on construction of the new line would commence immediately and that material would be assembled at an early date. The new line will be completed not later than January 1, 1927, they declared.

* * *

New Britain Gas Light Co. Votes Stock Increase

New Britain, Conn.—At the regular quarterly meeting of the directors of the New Britain Gas Light Co., the directors recommended to the stockholders that the capital stock be increased from $1,000,000 to $1,250,000. A special meeting of the stockholders was called for November for this purpose.

Should the stockholders confirm the action of the directors, the money for the new stock will be called for some time during the month of January and will be used to increase the manufacturing capacity at the gas works and to pay for the pipe line from the gas works to the north end of the town. The rapid growth of the outlying sections of the city makes necessary this addition.

The usual dividend of 2 per cent payable November 1 to stock of record October 26 was voted.

Gas Meter Display at Meriden

Meriden, Conn.—A display of gas meters and their various parts by the Connecticut Light and Power Company in its windows is attracting considerable attention and much favorable comment has been heard on the novel idea. The exhibition is similar to one shown at the convention last month of the American Gas Association at Atlantic City and previously by the Providence Gas Company. Several exhibits were loaned to the local corporation for the display, while most of them are the property of the concern.

The idea of the display is to show the public that the gas meter is an accurate measuring device, is carefully tested and always dependable. The bureau of standards holds that the gas meter is the most accurate commercial measuring device in use today. Every gas meter is tested within 24 hours after its removal and adjusted to measure accurately, according to all rates, before it is put in use again. When a meter is disconnected from a pipe both ends are capped overnight and before connected again the temperature is found to be the same in the room, the water meter, the prover and the meter itself.

Probably the meter in the display attracting the most attention is a 300 light meter which was purchased in 1876 and measures 3,000 cubic feet of gas an hour. The meter is used by the Meriden Britannia Company, the Miller Company and the International Silver Company and during the past fifty years has measured twenty million cubic feet of gas.

The Grover slide valve meter, developed in 1844, which is in use today is also proving of interest to the public in viewing the display. The workings of the meter can be clearly seen. There are also displays of gas meter diaphragms before and after oiling and gas meter tables and all other parts.

The twenty-five cent meter is also being displayed, but the officials stated that it is fast being discarded in favor of the monthly and other meters.

A separate display is made of the Sprague cast iron meters. These meters contain an oscillating glass valve which is different from the meters made of tinned iron plates.

Bismarck Gas Co. Plans Improvements

Bismarck, N. D.—The Consolidated Utilities Company, a North Dakota corporation headed by Senator Frank E. Ployhar of Valley City as president, purchased the properties of the Birmarck Gas Company and the Valley City Gas Company on March 1 of this year. The new company has been laying mains and services in both places and making changes and additions this fall and winter in both places to improve the service. It is contracting for duplicate gas machines, storage holders, boilers, etc., to insure 24 hour service to its customers.

The Bismarck plant will be enlarged to take care of the growth of Birmarck and to supply gas to Mandan next spring, which will be fed from the Birmarck plant with a high pressure distribution system.

About three miles of main have been laid so far this year in Bismarck, 125 new customers using gas ranges and water heaters were taken on and a carload of gas ranges disposed of. Next year the budget provides for 15 miles of main extension, 600 services and meters which will take from five to seven carloads of gas ranges and about one carload of gas water heaters to supply the new consumers. The company will expend this year and next approximately $150,000 on the properties. J. T. Coleman, gas engineer, formerly with the Southern Indiana Gas & Electric Company at Hammond, Indiana, is actively in charge of all construction and operation with headquarters at Bismarck.

* * *

T. B. J. Merkt Addresses High School Students

Brooklyn, N. Y.—Theodore B. J. Merkt, industrial enginer of the Brooklyn Union Gas Co., recently spoke at the weekly assembly of the industrial classes of night high school. He stressed that 5,000 workers of the gas company are pledging daily in their work, continuance of efficient gas supply to Brooklyn and Queens homes.

"Many people think of gas only as an agent for lighting, cooking and heating in their homes," Mr. Merkt said, "but many recent developments have extended these important uses to include incinerators for garbage disposal, gas irons and clothes dryers for laundry work; steam, hot water and hot air heaters for homes of all sizes and types and refrigerators without a moving part."

* * *

Gas Plant Sought in South

Sheffield, Ala.—A request for a franchise to put in a gas plant in Sheffield and Tuscumbia, which will supply 25,000 homes, is still unsigned, according to Judge Allen J. Roulhac, president of the City Commission of Sheffield.

John J. Waters and John Flannigan, of Fort Lauderdale, Fla., have notified Sheffield they expect to take the franchise and are preparing now for its formal signing.

These men stated they were going to put in a high pressure system which will minimize piping and would be more satisfactory than old methods.

The need of gas in Sheffield and Tuscumbia has always been one of its great drawbacks, and many are looking forward to the time when this firm, or some other, gets the franchise and begins construction on a plant.

* * *

Central Hudson Rates Approved

Albany, N. Y.—The Public Service Commission has approved a new schedule of the Central Hudson Gas and Electric Company for gas service supplied in the city of Beacon. Schedule effective November 1, 1926, provides a new classification for use of service for fuel, light and power by ordinary meter, available to any consumer who will guarantee to pay for not less than 2,000 cu. ft. per month. Rate is $1.85 per M. cu. ft. for the first 10,000 cu. ft., and $1.80 per M. cu. ft in excess per month Minimum charge is the monthly guarantee. Discount of ten cents per M. cu. ft. allowed on bills paid within ten days from date thereof.

W. S. Blauvelt Resigns As President of Indiana Coke & Gas Co.

Terre Haute, Ind.—Warren S. Blauvelt, president of the Indiana Coke and Gas Company prior to its sale to the Indiana Consumers Gas and By-Products Company, has resigned. The resignation of Mr. Blauvelt is a part of the reorganization plan of the new company.

This plant began operating in 1916 and furnishes gas at wholesale rates to the Indiana Gas Utilities Company, with serves a population of about 85,000 in Terra Haute besides the surrounding territory. A recent industrial survey by Ford, Bacon and Davis, Inc., shows an available undeveloped industrial gas load adjacent to Terre Haute in excess of 4,000,000,000 cubic feet annually.

The coke output of the plant is distributed through the company's own sales organization to the industrial and domestic trade throughout Indiana, Illinois, Iowa and parts of Wisconsin, Minnesota, Michigan and South Dakota.

Sale of the entire output of tar and ammonia is arranged for under contracts with the Barrett Company and others, while the benzol and light oils find a ready market as motor fuel and for other purposes.

The by-products plant consists of sixty Koppers Company gas and coke ovens with complete auxiliary equipment for the recovery of by-products. Thirty of these ovens began operation in 1919 and thirty in August, 1926. A valuation certificate dated September 17, 1926, by Ford, Bacon and Davis, Inc., shows the reproduction cost, less depreciation, or all the fixed assets which the company aquired to be $4,791,609.

The capitalization of the company consists of 100,000 shares of common stock of no par value, $500,000 in second preferred stock and $300,000 in first preferred stock. In addition there is a funded debt of $1,200,000 in three-year debenture notes due October 1, 1929, and the present issue of gold bonds.

* * *

Federated Utilities Purchase Washington County Gas Co.

Nashville, Tenn.—Official announcement has been made by President E. J. Wagner of the Washington County Gas Company confirming the report that the local company has been purchased by the Federated Utilities Company of Battle Creek, Mich. The consideration was not made public. The local plant is the fourteenth now controlled by the Battle Creek corporation, most of them being in the South.

President Wagner stated that there would be no change in the personnel of the local organization of which he will be in charge, but he confirmed the report that plans for an immediate enlargement of the plant were now being made. It is understood that extensions are being considered to nearby industrial towns, as Johnson City is surrounded by a circle of live and growing towns which are without gas. With the city as the central point and plant location, it is understood that a network of lines will eventually be laid in this territory, Elizabethtown, Erwin, Jonesboro and other close-in towns being mentioned.

Iowa So. Utilities Company Lauded

Gas Service Praised By Citizens

Burlington, Ia.—There is no feature in the life of a modern city which, in proportion to its importance, receives less thought than does the average public utility, such as a street railway, power, light or gas system. Just as long as everything is going along smoothly, the public accepts the service as a matter of course and it is only when there is an occasional breakdown in the service that the surprising extent of the community's dependence comes to light.

This universal attitude in responsible for the fact that in the past year or so a great change has been under way in Burlington which has affected to a certain degree the greater portion of the city's population, without most of the people realizing that it was going on.

Improve Service

When the Iowa Southern Utilities Co. purchased the Burlington street railway, power and gas utilities from the Walsh interests, two years ago last August, the new owners bought a system which had been rendering efficient service for years, but which was beginning to show need of improvement. In announcing the change in ownership, the I. S. U. Co. also announced that it was proposed to make such changes as were needed to give the most efficient service.

This statement was taken with the proverbial grain of salt in many quarters, since people are occustomed to hearing promises of improvement whenever any business changes hands, these promises in many cases being forgotten in a short time. However, the I. S. U. Co. proved to be an exception.

As has been said, the Burlington utilities properties were sold to the new owners in August, 1924, but the I. S. U. Co. did not take possession until the following January. Immediately the work of improving the local holdings was inaugurated and it has been steadily pushed forward until today, after 21 months of ownership, the company is able to point to a number of important improvements in the equipment and service which it is its object to supply to the public.

Many Improvements

Possibly the largest single improvement in the city was the erection of the new sub-station and power house, completed this year, and rated as one of the finest and most modern plants of its kind in the country. Another big change was the taking over of the business of the Burlington Gas Light Company, thus combining the power and light and gas facilities of the city under one head. The leasing of the building at 209 North Third street as a home of the company in Burlington and the remodeling of the entire structure into an up-to-date store and office building, added greatly to the appearance of the Burlington business section.

The installation in this building of a retail gas and electrical appliance store under the general management of the I. S. U. Co., marks

the entry of this concern into the retail business in Burlington.

Important changes have been made in the transportation department, consisting of the substitution on certain lines of motor coaches for the old street car service. A new motor coach garage has been built to accommodate the coaches. The elctric light and power service has been modernized and made safer against interruption by the completion of a new steel towered tension line from Fort Madison, which in turn connects with a similar line from the Keokuk dam, where the power used in Burlington originates.

Building for the Future

These constitute the main improvements of which the company has a just right to be proud. In addition, there have been many minor changes, all intended to give to the citizens of Burlington and nearby territory the very best possible in efficient electrical service.

"We believe that we are building for the future," says J. W. McElroy, manager of the Burlington division, who came to this city from Centerville two months ago to fill the position left vacant by the sudden death of John Chase, the previous manager. "We want to give to Burlington the very best service in an electrical way which can be found anywhere.

"Our desire to do this is not altogether ulterior, for it has been proven that the town which affords the best transportation facilities and the most reliable power and light utilities is the one which is the most likely to attract new business enterprises and new citizens, with the resulting increase in the growth of the city and a consequent enlarged demand for the service which we supply.

"We do not desire to give the impression that the public is dependent on us for service but rather that we are dependent on the public, for we are striving to give to the people of this territory the service which they desire and it is only by giving them what they want that we are able to prosper."

* * *

Mountain States Company Publishes House Heating Booklet

Tacoma, Wash.—In support of its new business campaign, the House Heating Department of the Tacoma Gas and Fuel Company division of Mountain States Power Company, has published an attractive 16-page booklet, under the title "What Price Comfort—In Your Home."

The booklet, which was produced under the direction of John H. N. Adams, assistant sales manager of the Mountain States Power Company, in co-operation with the advertising department of Byllesby Engineering and Managment Corporation, is illustrated with views of typical Tacoma homes employing gas for house heating.

Constructing Gas Lines

San Antonio, Tex.—Accompanied by an announcement that the Southern Gas Company of this city will extend its pipe line from the southern extremity in the Carolina-Texas field in Webb county, twenty miles to the Henne-Winch-Farris pool in Jim Hogg county is another announcement that the Western Gas and Fuel Company will build an eight-inch main from Medina county gas field thirty-two miles to San Antonio. The Western company is a subsidiary of the Southern.

Fort Smith Gas Company Is Sold

Southwest Utilities Merger Is Seen in Sale to Unnamed Purchaser

Fort Smith, Ark.—Controlling stock in the Industrial Oil and Gas Company and the Twin City Pipe Line Company has been sold by its Fort Smith owner to a New York banking house, representing an unknown utility client.

Other recent developments in the utility field in the Southwest indicate that Henry L. Doherty, one of the largest utility operators of the nation, probably is the purchaser, and that he plans to hook up the Fort Smith gas field, the new Clarksville (Ark.) field and the properties of the Oklahoma Natural Gas Company with his Kansas utilities into a single gas system covering western Arkansas, Oklahoma, southwestern Missouri and Kansas.

S. N. Whitwell Passes Away

Washington, D. C.—Sanford N. Whitwell, 57 years old, controller of the Washington Gas Light Company, died suddenly at his residence recently, having been stricken with pneumonia only a few hours previously. He had been in poor health for some time, but had continued his duties.

Mr. Whitwell was a native of Washington, educated in the public schools of the city, and entered the service of the gas company as a stenographer almost forty years ago. He was later appointned assistant secretary and was elected general auditor when a separate accounting department was formed. Later the position was designated as controller.

He was also president of the Washington Gas Light Company of Montgomery county, Md.; general auditor of the Georgetown Gas Light Company and of the Georgetown Gas Light Company of Montgomery county, Md.; a director and secretary and treasurer of the Rosslyn Gas Company.

In 1923 he inaugurated here the first campaign for customer ownership of public utility securities.

Mr. Whitwell was a member of the Washington Stock Exchange, Chamber of Commerce, the Racquet Club and the Church of the Covenant. For many years he was a member of the board of trustees of the church, until obliged to resign because of failing health.

Mr. Whitwell married Miss Louise Fenwick, of this city, who survives him, as do also a daughter, Mrs. Joseph D. Hopkins, of Price, Utah; a son, George Edward Whitwell, general manager of the Equitable Gas Company of Pittsburgh; four grandchildren and a brother, George Miller Whitwell, of this city.

E. H. Cotton Appointed Assistant Gas Engineer

Minneapolis, Minn.—The Northern States Power Co., Minneapolis, Minn., has announced the appointment of E. H. Cottom to the position of assistant Gas Engineer.

Mr. Cotton was formerly superintendent of production of the St. Paul Division of the Northern States Power Company, St. Paul, Minnesota, having been transferred to the latter position from

E. H. Cotton

his official capacity as superintendent of stations in the old St. Paul Gas Light Company. Mr. Cotton, who is a graduate of the University of Minnesota, has been almost continuously in the employ of the St. Paul Gas Light Company since 1918, the only interruption to his service being the time spent in the United States navy during the period of the World War.

* * *

HERBERT SKINNER HEADS NEW DEPARTMENT FOR D. P. AND L.

Gas Sales Manager Comes to Dayton From Eastern Position

Dayton, O.—The development of a new department in its organization as indicated to the city commission recently was fulfilled by the Dayton Power and Light Company in securing the services of Herbert H. Skinner to fill the position of gas sales manager.

Mr. Skinner has filled important capacities with large eastern gas and electric companies, and comes direct to the local company from the Central Hudson Gas and Electric Company, of Poughkeepsie, N. Y., a syndicate of several utility properties serving consumers in the entire Hudson river valley.

The purpose of the commercial gas engineering department under Mr. Skinner will be to assist in the design and operation of gas appliances not only in the home, but in hotel kitchens, the use of gas in industry, but in the development of a service which will be available to the public at all times. Engineers with testing instruments will be at the disposal for the study of heat and its use in manufacturing tools and equipment and for any other industrial problems. This service will be free and may be had upon request at any time through the Dayton Power and Light Company.

Mr. Skinner will have an unusual opportunity of presenting the first step in his new program during the gas exposition at Memorial hall. This exposition is sponsored by the local power company and will be of immense value to the public, as it will give them every advantage to observe the many wide uses of gas and how efficient equipment aids in the economical use of the ideal fuel.

Laclede Baseball Team Finishes As Runner-Up in Championship

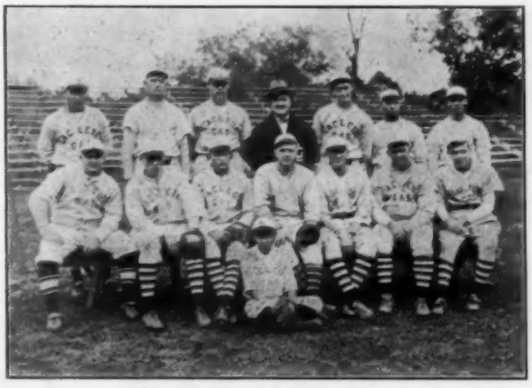
St. Louis, Mo.—The Laclede Gas Light Company baseball team finished as runner-up for the St. Louis Municipal championship, second among the teams which played organized amateur baseball in St. Louis this year.

The Laclede nine won a place in the final round by winning the pennant in the Empire League with thirteen games won and seven lost for a percentage of .650. That feat placed the team in competition with about twenty other teams—pennant winners in their respective leagues—for the municipal championship.

Laclede Gas entered this competition as a dark horse and was compelled to meet some of the highly touted teams of the city but marched right through all competition to the semi-finals, attracting a large following. The Pants Stores team was the other finalist in a three-game series for the city title. It took the opener from the Lacledes in a hard fought contest, 7 to 6. The Lacledes came back in the second contest to win by the overwhelming score of 14 to 2.

After several postponements on account of rain the teams met in the third and deciding contest with the gas men losing.

The members of the team are: Steinman and Readmond, pitchers; Davis and E. Dueker, catchers; English, first base; Liebrun, utility; Ahern, short stop; Braun, third base; Scott, right field; Brengle, center field; J. Dueker, left field, and Sarason, center field. J. D. Sowash and Harry McDonough managed the club.



The Team

* * *

John S. Wise, Jr., Named Vice-President of Gas Co.

Mauch Chunk, Pa.—John S. Wise, Jr., of Allentown, formerly of Hazleton, has been named as vice-president of the Mauch Chunk Gas Company, which recently was taken over by the Pennsylvania Power and Light Company.

With Gas Appliance and Equipment Manufacturers

The New Hays Pointer Draft Gages

One feature of the new Hays pointer draft gage is the extreme simplicity of the operating mechanism which consists essentially of a slack leather diaphragm, a phosphor bronze spring and a pointer mounted on a pivot bearing which is attached to the spring by a nickel silver bead chain.

The diaphragm is a pliable, tough gas-tight animal membrane which the Bureau of Standards has found to be ideal for this service. The diaphragm merely transmits the force of the draft of the pressure to the flat bronze spring which in turn moves the counterweighted pointer on its pivot and thus produces a reading on the scale in direct proportion to the magnitude of the force acting upon the diaphragm. The area of the leather diaphragm as compared to that of the inlet tube is large so that the draft action is greatly magnified

Operating Mechanism of Gage

and a comparatively powerful force acts upon the spring. The latter is held rigidly at one end and its movement is well within the elastic limit, so that the gage should hold its calibration indefinitely.

Zero adjustment is necessary only when the gage is first mounted in position. By means of a micrometer screw the entire mechanism is tilted until the arrow points to zero and thereafter the zero position of the pointer does not shift. As the gages do not need to be leveled, they are easily mounted in the power plant and are well suited for testing work where portability and quick set-up are desired.

All gages are direct reading. They can be calibrated for a total scale range of ¼-inch water draft up to 30 inches of water pressure using the standard diaphragm mechanism and any differential range within these limits can be handled for either draft or pressure. A slightly different mechanism handles high pressure ranges with scale calibrated in pounds per square inch instead of inches water. Except in meters having a positive and negative range the zero is at the bottom of the scale. This facilitates reading where a number of pressures have to be taken simultaneously, as in the control of mechanical stokers.

In the "V" type gages, scales measuring 12 inches long and 2½ inches wide are provided with large plain black figures. Bright red indicating arrows and a translucent illuminated scale of long radius improves the visibility so that readings may be taken from distances of 100 feet and over a wide angle of vision. The cases are moisture and dustproof and aluminum covers are used to protect the leather diaphragm.

A bulletin containing the complete description of the two types of Hays Pointer Draft Gages will be sent on request by the manufacturers, The Hays Corporation, Michigan City, Ind.

* * *

Steere Clinker, Ash and Cleanout Doors

This title appears on Pamphlet No. 291 just issued by the Steere Engineering Co., Detroit, Mich.

It describes a new scientifically constructed door for water gas machines, that, it is claimed, makes it possible for the operator to reach readily all parts of the generator walls and grates.

This new type of door can be used on existing machines where new doors are required to replace doors, around which the shell has become overheated and the steel deteriorated. The pamphlet explains the method by which this is accomplished.

To obtain a copy of Pamphlet No. 291 write to the Steere Engineering Co.

* * *

The Coxe Traveling Grate Stoker

Catalogue C-4, a new publication of the Combustion Engineering Corporation, 43 Broad street, New York, pertains to the adaptability of the Coxe Forced Draft, Traveling Grate Stoker in successfully burning low grade anthracite, coke breeze and bituminous coal.

Beginning with the early history of the Coxe Stoker, the pages following feature its development and describes the improvements which have added to the efficiency and mechanical excellence of the present type.

The design and construction and the method of operation, are well illustrated and described, together with graphs signifying performance with various fuels.

A chart of typical evaporated tests showing a record of efficiency over a wide range of capacities, is reproduced to give the engineer a keener insight into the possibilities of this type of mechanical stoker.

A complete list of other products of the Combustion Engineering Corporation is appended, containing a wide diversity of types of apparatus designed for increasing the efficiency of the modern power plant.

A request for Catalogue C-4 will bring a quick response from the Combustion Engineering Corporation.

* * *

Meters for Special Service

The latest publication issued by the Connersville Blower Company, Connersville, Indiana, is Bulletin No. 43, devoted to the Tandem Meter, the Demand Recorder, the Reversing P.V.T.T. Recording Gauge and the Long Distance Recorder.

These necessary adjuncts to the well regulated gas plant are described in a short, pithy manner, with high grade halftone illustrations showing clearly the details of the various apparatus.

A request directed to the Connersville Blower Company will bring one of these bulletins.